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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,046	11/21/2001	Julian Marshall	5809.P003	4475

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07/08/2005

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EXAMINER

LUU, MATTHEW

ART UNIT

PAPER NUMBER

2676

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/992,046

Applicant(s)

MARSHALL ET AL

Examiner

LUU MATTHEW

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-14, 38-43, 46, 89 and 100 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-14, 38-43, 46, 89 and 100 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is responsive to the Applicant's remarks filed February 22, 2005.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8-14, 38-43, 89, and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al (US 2003/0212327) (Provisional application No. 60/252,946, filed on November 24, 2000) in view of Bodicker et al (US 2002/0193676).

Regarding claim 89, Wang discloses (Figs. 1, 3, and 4) a method of displaying medical images from a computer aided diagnostic (CAD) system (page 4, section [0050]), comprising:

Identifying a medical image based on an image identification (Fig. 3, steps 304 and 306) (page 6, sections [0063, 0064]);

Identifying a lightbox for the image and highlighting the identified lightbox on a lightbox icon (Fig. 14, step 1406; Fig. 15, active icon member 1510) (page 10, section [0085]);

displaying the image to the user;

displaying a plurality of lightbox icons for selection (Fig. 15 thick-slice array 1502), and the user select a lightbox layout corresponding to an actual layout at a current location (the current location is the highlighted active member 1510) (page 6, section [0064]).

The only difference between the disclosure of Wang and the claimed invention is that claim 89 requires the step of prompting the user for selection. Furthermore, Wang fails to explicitly teach that his medical images are iconic images.

However, it would have been obvious to a person of ordinary skill in the art to recognize that the step of prompting a user for selecting an iconic representation, a thumbnail, a window menu, or a menu item in a graphics user interface (GUI) system is well known in the art.

Bodicker, from the same field of endeavor, discloses (Figs. 7 and 8) the iconic medical image layout being displayed on a screen for user selection. See page 4, section [0059] to section [0064]. Thus, It would have been obvious to the person of ordinary skill in the art to use the iconic medical image layout of Bodicker into the medical image layout of Wang to provide more user friendly and more intuitive for a user to select and view in a more convenient and sufficient manner.

Regarding claim 100, Wang discloses (Fig. 1 and 18-20) the x-ray viewing station (109) may range from a simple light box, as in Fig. 1, to more complex x-ray mammograms past the radiologist (124) on a conveyor belt as a nearby CAD display highlights suspicious areas of the mammogram (page 4, section [0050]). Furthermore, Wang further discloses (Fig. 19) a previous slab key (1904) allows the user to view the

previous image (page 11, section [0095]). Bodicker further discloses (Fig. 9) a previous button (70).

Regarding claim 38, Wang discloses (Figs. 1, 3-4, and 18-20) an independent display system for a computer aided diagnostic (CAD) system (page 4, section [0050]), comprising:

- a display (Fig. 18, a display unit 1804);
- a user interface (Fig. 19) to permit a user to interact with the display;
- a layout indicator shown on the display indicating a lightbox to which a currently displayed image corresponds (Fig. 14, step 1406; Fig. 15, active icon member 1510) (page 10, section [0085]) ;

wherein the layout indicator comprises:

- an icon (Fig. 15, icon 1522) of the independent display system positioned in proximity of one or more icons of light boxes, reflecting an actual layout in a current location (Fig. 15 thick-slice layout 1502; and the current location is the highlighted active member 1510) (page 6, section [0064]).

Wang fails to explicitly teach that his medical images (1522) are iconic images. However, since Wang mentions that his medical images can be the thumbnail images (page 5, section 0053), it would have been obvious to a person of ordinary skill in the art to recognize an iconic representation, a thumbnail, a window menu, or a menu item can be considered as an icon.

Furthermore, Bodicker discloses (Figs. 7 and 8) the iconic medical image layout being displayed on a screen for user selection. See page 4, section [0059] to section [0064]. Thus, It would have been obvious to the person of ordinary skill in the art to user the iconic medical image layout of Bodicker into the medical image layout of Wang to provide more user friendly and more intuitive for a user to select and view in a more convenient and sufficient manner.

Regarding claims 39-41, Bodicker discloses (Figs. 5-8) the iconic medical image layout being displayed and altered on a screen for user selection. See page 4, section [0059] to section [0064].

Regarding claim 42, Wang discloses (Fig. 1) wherein the display (126) is a touch screen (page 5, section 0052).

Regarding claim 43, note the rejection as set forth above with respect to claim 42. Furthermore, Bodicker also discloses (Figs. 7 and 8) the iconic medical image layout being displayed on a screen for user selection. See page 4, section [0059] to section [0064].

Regarding claim 46, Wang discloses (Fig. 1 and 18-20) the x-ray viewing station (109) may range from a simple light box, as in Fig. 1, to more complex x-ray mammograms past the radiologist (124) on a conveyor belt as a nearby CAD display highlights suspicious areas of the mammogram (page 4, section [0050]). Furthermore, Wang further discloses (Fig. 19) a previous slab key (1904) allows the user to view the previous image (page 11, section [0095]). Bodicker further discloses (Fig. 9) a previous button (70).

Regarding claim 8, Wang discloses (Figs. 1, 3-4, and 18-20) an independent display system for a computer aided diagnostic (CAD) system (page 4, section [0050]), comprising:

in input mechanism (Fig. 3) to receive an identifier for a medical image (Fig. 3, steps 304 and 306) (page 6, sections [0063, 0064]);

a touch screen(126)(page 5, section 0052).

a plurality of icons is a layout indicator shown on the display indicating a lightbox to which a currently displayed image corresponds (Fig. 14, step 1406; Fig. 15, active icon member 1510) (page 10, section [0085]);

Wang fails to disclose the medical image including any marked regions of interest.

However, Bodicker also discloses (Figs. 7 and 8) the iconic medical image layout being displayed on a screen for user selection. See page 4, section [0059] to section [0064]. Bodicker further discloses the medical image including any marked regions of interest (page 1, sections 0012-0013). Thus, It would have been obvious to the person of ordinary skill in the art to user the iconic medical image layout of Bodicker into the medical image layout of Wang to provide more user friendly and more intuitive for a user to select and view in a more convenient and sufficient manner.

Regarding claim 9, Wang discloses (Fig. 1 and 18-20) the x-ray viewing station (109) may range from a simple light box, as in Fig. 1, to more complex x-ray mammograms past the radiologist (124) on a conveyor belt as a nearby CAD display

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highlights suspicious areas of the mammogram (page 4, section [0050]). Furthermore, Wang further discloses (Fig. 19) a previous slab key (1904) allows the user to view the previous image (page 11, section [0095]). Bodicker further discloses (Fig. 9) a previous button (70).

Regarding claim 10, Wang discloses an icon (Fig. 15, icon 1522) of the independent display system positioned in proximity of one or more icons of light boxes, reflecting an actual layout in a current location (Fig. 15 thick-slice layout 1502; and the current location is the highlighted active member 1510) (page 6, section [0064]).

Regarding claims 11-13, Bodicker discloses (Figs. 5-8) the iconic medical image layout being displayed and altered on a screen for user selection. See page 4, section [0059] to section [0064].

Regarding claim 14, Bodicker also discloses (Figs. 7 and 8) the iconic medical image layout being displayed on a screen for user selection. See page 4, section [0059] to section [0064].

Response to Arguments

Applicant's arguments filed February 22, 2005 have been fully considered but they are not persuasive.

The Applicants argue, at page 2, by asserting that "To the extent the Office Action is understood, applicants believe that Wang's parent application filed November 19, 2001 and the provisional applications filed 2000 and 2001, do not describe the

subject matter relied upon by the examiner in this rejection". The examiner respectfully disagrees.

The attached provisional application (60/252,715) clearly discloses the subject matter relied upon by the examiner in the previous rejection.

The provisional application discloses (Fig. 9) a method of displaying medical images from a computer aided diagnostic (CAD) system comprising:

identifying a medical image based on an image identification (Fig. 9 shows the display (900) includes a CAD result display (914). The CAD result display (914) is designed to highlight areas of suspicion in the medical and draw them to the attention of the screening radiologist, who may then closely examine the original medical image. Fig. 9 also shows highlighting arrows (918) to draw the attention of the radiologist toward the suspicious lesions appearing in the ultrasound image slices) (Page 17, line 25 to page 18, line 5);

identifying a lightbox for the image and highlighting the identified lightbox (Figs. 4 and 9 show the light box images) (Page 14, lines 16-21); and

displaying the image to the user (Page 17, line 25 to page 18, line 5).

Based on the teaching above, the attached provisional application (60/252,715) clearly discloses the subject matter relied upon by the examiner in the previous rejection. Therefore, the Wang et al reference (US 2003/0212327) is a proper prior art to the present invention.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Wang (5,828,774) discloses a computer-aided diagnosis system for displaying X-ray images at both high-resolution and high-illumination with annotation superimposed in registration therewith.

-Giger et al (5,984,870) discloses a system for the automated analysis of lesions in ultrasound images.

-Marshall et al (5,917,929) disclose a user interface for facilitating the input of films into a computer-aided diagnosis system.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUU MATTHEW whose telephone number is (571) 272-7663. The examiner can normally be reached on Flexible Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BELLA MATTHEW can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. Luu

A handwritten signature in black ink, appearing to read 'Matthew Luu', with a large, stylized initial 'M'.

MATTHEW LUU
PRIMARY EXAMINER